

U.S. ARMY GARRISON, FORT RITCHIE
LOWER LAKE DAM
Fort Ritchie Military Reservation
Washington County
Maryland

HAER No. MD-105

HAER
MD
22-CASC,
2-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

National Park Service
Northeast Region
Philadelphia Support Office
U.S. Custom House
200 Chestnut Street
Philadelphia, P.A. 19106

HAER
MD
22-CASC,
2-

HISTORIC AMERICAN ENGINEERING RECORD

U.S. ARMY GARRISON, FORT RITCHIE, LOWER LAKE DAM

HAER No. MD - 105

Location: Fort Ritchie Military Reservation, *Cascade*
Washington County, Maryland

UTM: 18.285100.4398100
U.S.G.S. Quadrangle: Blue Ridge Summit, PA-MD

Date of Construction: 1926; with repairs in 1929/31, 1957, and 1979

Engineer: Robert F. Barrick; Captain, Maryland National Guard

Architect: Robert F. Barrick; Captain, Maryland National Guard

Present Owner: U.S. Army

Present Use: Dam

Significance: This dam is the lower unit of a two part-water control system at Fort Ritchie, Maryland. Both dams are locally important structures used to maintain the recreational-use lakes at Fort Ritchie. Although this dam and the Upper Dam (HAER No. MD - 104) replace the original dams built by the natural ice company that operated at this site prior to the establishment of Post in 1926, the current dams serve to maintain the two lakes in their pre-military appearance.

Project Information: The Army Corps of Engineers has determined that the upper and lower dams have structural problems that must be repaired to prevent any damage to property located below the dams and to the population that lives along the stream that flows from the two lakes. Both dams have been determined to be eligible for listing in the National Register of Historic Places by the Maryland State Historic Preservation Office. Documentation of both of the dams is stipulated in a Memorandum of Agreement with the Maryland State Historic Preservation Office. The National Park Service determined the level of documentation.

Stephen G. Del Sordo, Senior Historian
Dames & Moore
7101 Wisconsin Avenue, Suite 700
Bethesda, Maryland 20814

Summary Description of Lower Dam and Setting

The Lower Dam and its companion structure, the Upper Dam, at Fort Ritchie are small structures across a small branch of the Red Run Falls Creek. The lakes formed by the two dams have a maximum capacity of 79 million gallons of water (Fort Ritchie 1993:1-67-69). The Lower Dam is a poured-concrete structure with a catwalk across the top. The water from the lake flows over the top of the dam and into a small pool at the foot of the dam before it enters the creek. The ornament of this dam is minimal, consisting of the shape and slope of the dam and the wingwalls. The Upper Dam is faced with large, local boulders. These tend to give the dam a rustic/natural appearance that appears to reflect the region's use as a resort area during the early part of the twentieth century rather than as a utilitarian structure designed to create a lake for the production of ice. The water from this lake flows into a small feeder-stream that flows into the Lower Lake. Both of the lakes and their associated dams are designated as recreation areas by Fort Ritchie.

History and Significance of Lower Dam

In approximately 1889, the Buena Vista Ice Company of Philadelphia (Barrick 1965:1) purchased 400 acres of the land where Fort Ritchie now stands. The company's aim was to cut natural ice from a manmade lake and ship it to Baltimore, Washington, and southern markets by using the Western Maryland Railroad's Baltimore-Hagerstown line. The demand for natural ice had grown steadily during the last half of the nineteenth century as the U.S. population had increased and as consumers began to demand fresh and wholesome milk products and fresh produce. Thaddeus A. Wastler organized the company (History of Fort Ritchie:1) and served as the superintendent of the operation. The first artificial lake was built in approximately 1901 and named after Wastler's father-in-law, Samuel T. Royer. That lake is usually referred to as the "Lower Lake" (Fotheringham 1992:1). A series of ice houses, each measuring 40 feet wide, 100 feet long, and 32 feet tall, was built alongside the lake to store the ice. Eventually, eleven

of these houses were built (Barrick 1965:1). Each of the ice houses could hold 30,000 tons of ice stored in sawdust. The blocks of ice could survive two or three years in this condition (Fotheringham 1992:1).

A railroad spur off the Western Maryland line was built alongside the ice houses and southeastern shore of Lake Royer by 1903. The spur served as the primary means of getting the ice cut from this lake to market. Unfortunately, the locomotives' exhaust laid soot on the ice in the lake. In response to this problem, Mr. Wastler built the second artificial lake that would be far enough away from the locomotives' soot to remain clean for ice cutting. He named the lake "Wastler" (Fotheringham 1992:1). Locally, this lake is known as the "Upper Lake." Because Lake Wastler was removed somewhat from the ice storage houses and railroad spur alongside Lake Royer, a conveyor belt system was constructed to transport the ice blocks to the railroad siding.

The Buena Vista Ice Company's Lake Royer also served as a recreational spot during the summer tourist season. Sand was imported, bath houses constructed, and racing and swimming events were held (Fotheringham 1992:4). However, the log-crib dam which had held back the water in Lake Royer broke open in 1916. The ice company did not repair the dam at the lower lake, and the lake remained dry for the next ten years. One boat had remained aground in the lake during that time (Barrick 1965:2 and 7).

The Buena Vista Ice Company was formed in the same year that a patent was issued for a mechanical method for producing ice. Although the demand for natural ice continued into the 1920s and 1930s, the market share for natural ice declined over the years. Also, the ice business became highly competitive after 1890. In the larger cities of Boston, New York, Philadelphia, Baltimore, and Washington, the natural and mechanical ice business was often controlled by one or two firms. In 1893, a resident of Bath, Maine, Charles W. Morse, organized a merger of many of these ice companies into the American Ice Company. This firm

consolidated its operations into larger ice houses and it invested in mechanical ice houses (Jones 1984:114). Accordingly, it was most likely not cost effective for the Buena Vista Ice Company to rebuild the lower lake dam when it burst in 1916. It is not known if this firm ever became a part of the American Ice Company. However, a 1926 map prepared by the Maryland National Guard of the site for Camp Ritchie does indicate that the owner was the Buena Vista Ice Company (Barrick nd). Therefore, it can be assumed that the Buena Vista Ice Company remained independent or was ignored by the larger ice companies as not significant to the overall delivery system of ice to Philadelphia, Baltimore, or Washington.

In the spring of 1926, the Maryland National Guard investigated several locations in searching for a new summer training camp. A decision in favor of the study area was primarily based upon its proximity to the Western Maryland railway and the telegraph line (Dietrick 1972:3). The camp was named Camp Albert C. Ritchie after the contemporary governor of Maryland (History of Fort Ritchie Up Until WWII:8). The 400 acres purchased on May 21, 1926, by the State of Maryland for its National Guard camp contained two ice houses, two manmade lakes, the railroad spur, 11 homes and five barns. The area was densely wooded and scattered with field stones (Dietrick 1972:5).

One of the first tasks undertaken by the Maryland National Guard's Post Commander, Captain Robert F. Barrick, was the construction of a new dam at Lake Royer, the lower lake. This lake had been empty since the log dam burst in 1916. A "new concrete spillway" was installed and the lake was filled (Barrick 1965:1-2). The area around the upper lake was also re-engineered, involving a significant amount of excavation and terrain recontouring.

"The stream from the mountainside was diverted underground to feed the upper lake" (Dietrick 1972:7) through a series of ditches and culverts. Subterranean drainage lines measuring 4 feet by 6 feet and others measuring 3 feet by 6 feet were laid out (Barrick 1934).

An effort was also made to strengthen the dam at Lake Wastler. "Men used picks and shovels and dump carts to haul the dirt to build the embankment that shored up and reinforced the banks of the upper lake, where the stoney spillway is" (Dietrick 1972:5). However, the Barrick map of the Buena Vista Ice Company property, depicts the upper lake as once having had two spillways that drained into the lower lake. It appears that Barrick may have removed the northernmost spillway of the upper lake. This information may indicate that Lake Wastler and its single spillway were not originally designed to hold as much water as was diverted there after construction of the drainage system to the south and west of the upper lake. This effort to reinforce the banks of the upper lake may have been necessary to contain an increased amount of water being fed into it by the drainage system. It is possible that an increased flow from Lake Wastler contributed to the disaster that occurred in 1929 at Lake Royer.

On June 19, 1929, the earthen walls of the lake were pierced and the lake drained, destroying the town of Rouzerville, Pennsylvania. Fifty million gallons of water rushed down the Red Run Falls Creek and destroyed approximately 40 homes (Waynesboro 1976). The lake was now empty and so Captain Barrick set about ensuring that the dam would not burst again. He and his men "built large core walls in the earth banks" 31 feet deep and "extending 110 feet on each side of the spillway" (Camp Ritchie 1940:2-3). There is some physical evidence for the repairs and reinforcement that was done to the dam and the earthen walls after the accident. Set into the concrete on the upper surface of the dam walls are the following hand-inscribed names and dates: "whitehall cement"; Arundal Sand"; Copper Rock"; "Jan 13 1931"; and "Pat Emory" (plus other names and initials that are now obscure). In addition, the Maryland State Seal is hand-drawn into the concrete. There is also a Maryland National Guard Shield insignia drawn into the concrete next to the Maryland State Seal.

There are two pieces of information that conflict with regard to the cause of the accident at the lower dam. The various histories of Fort Ritchie and the oral traditions at the Post, point to the accidental opening of flood gates as the cause for the accident. However, the library at

Fort Ritchie has two photographs taken of the lower dam after the accident. One, a photograph in the Baltimore News on Thursday, June 20, 1929, shows the lower lake dam. That photograph clearly indicates that the concrete dam and spillway were not involved in the accident. Rather, the earthen side wall gave way under the pressure of the water. That same photograph does not show any form of interior reinforcement to the earthen wall. A second photograph shows some of the repair work that began soon after the earthen wall gave way. Although it does not show the dam itself, it shows that the debris on the road in front of the dam was dirt and silt, not concrete. Therefore, what occurred on June 19 was a collapse of the earthen walls next to the dam and not a problem with the floodgates unless the floodgates were located next to the dam and they were torn loose in the accident.

Both of the dams have been repaired over the years since 1929. Construction drawings at Fort Ritchie indicate that the lower dam was refaced with concrete in 1957 and that repairs were made to the flood and flow control gates in 1979. The upper dam received additional concrete supports and a catwalk for the flow controls in 1965. Surface damage to its concrete surface was repaired in 1979.

BIBLIOGRAPHY

Balkoski, Joseph

- 1991 *The Maryland National Guard*. State of Maryland Military Department.
Baltimore, Maryland.

Baltimore News

- 1929 Photograph "Where Lake Royer Burst its Bonds." June 20, 1929, (copy from Fort
Ritchie Library, no page number on copy).

Barrick, Captain Robert F., MD National Guard

- nd *The Buena Vista Ice Company*. An undated map of the Buena Vista Ice Company
and surrounding properties. Fort Ritchie Museum. Cascade, Maryland.

- 1934 *Map of Camp Albert C. Ritchie, Maryland National Guard*. Cascade, Maryland.

- 1940 *Map of Maryland National Guard Camp Albert C. Ritchie, Maryland National
Guard*. Cascade, Maryland.

Barrick, Major Robert F., USA QMC

- 1941 "Letter to William P. Lane." Fort Ritchie Museum. Cascade, Maryland.

Barrick, Major Robert F., USA QMC (Ret)

- 1965 "A Narrative of Photographs Held in the Museum's Collection." Fort Ritchie
Museum. Cascade, Maryland.

Camp Ritchie, Maryland

- 1940 *A History from the Fort Ritchie Museum*. Camp Ritchie. Cascade, Maryland.

Cummings, Richard O.

- 1949 *The American Ice Harvests; A Historical Study in Technology, 1800 - 1918*.
Berkeley, University of California Press.

Dames & Moore

- 1993 *Cultural Resource Management Plan (CRMP) and Maintenance, Rehabilitation and Repair Guidelines, Fort Ritchie, Maryland.* Cultural Resource Services Group, Bethesda, Maryland.

Directorate of Public Works, Fort Ritchie

- 1957 PE 61, Refacing of Lower Lake Dam, Construction Drawings.
1965 PE-SK 209, Installation of Concrete Support and Catwalk, Upper Lake Dam, Construction Drawings.
1979 PE 1449, Repairs to Flood and Flow Control Gates, Lower Lake Dam, Construction Drawings.
1979 PE 1452, Repairs to Concrete, Upper Lake Dam, Construction Drawings.

Dietrick, Elizabeth

- 1972 "Slide Narrative - April 11th, 1972 - Officers' Wives' Club Luncheon Program." Fort Ritchie Museum. Cascade, Maryland.

Fort Ritchie

- 1993 *Fort Ritchie Real Property Master Plan.* Prepared for the U.S. Army Corps of Engineers; Baltimore District, Baltimore, Maryland.

Fotheringham, Kathy

- 1992 "A Brief Undated History of the Buena Vista Ice Company." Fort Ritchie Museum. Cascade, Maryland.

History of Fort Ritchie During World War II

"Undated one-page summary." Fort Ritchie Museum. Cascade, Maryland.

Jones, Joseph C., Jr.

- 1984 *America's Icemen: An Illustrative History of the United States Natural Ice Industry, 1665 - 1925.* Humble, Texas, Jobeco Books.

Photographs

Undated Photographs of Lake Royer Dam and Repair Effort Provided by Fort Ritchie Library, Fort Ritchie, Maryland.

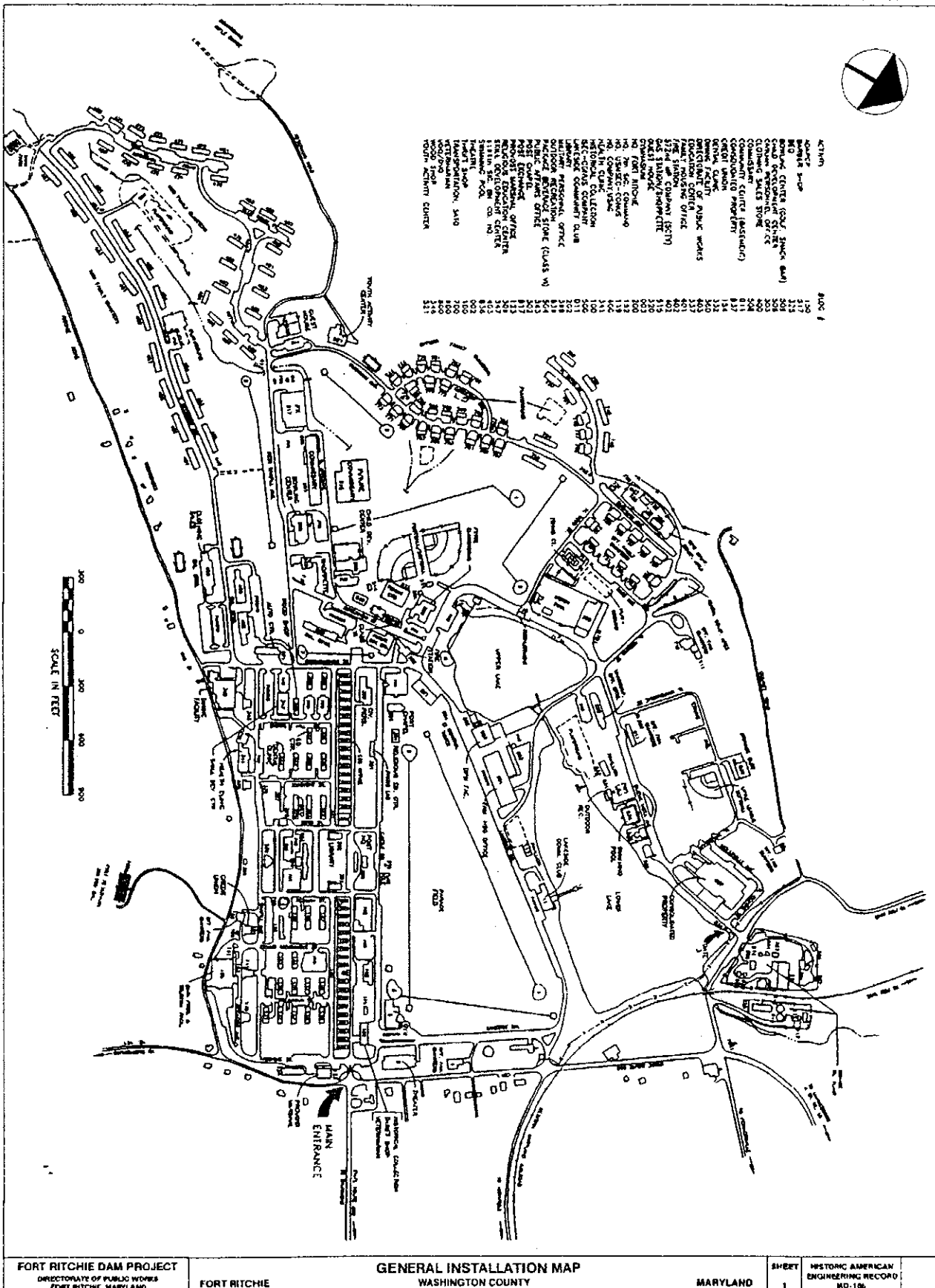
United States Geological Survey

- 1911 *Maryland-Pennsylvania, Emmitsburg Quadrangle.* United States Department of the Interior. Washington, D.C.

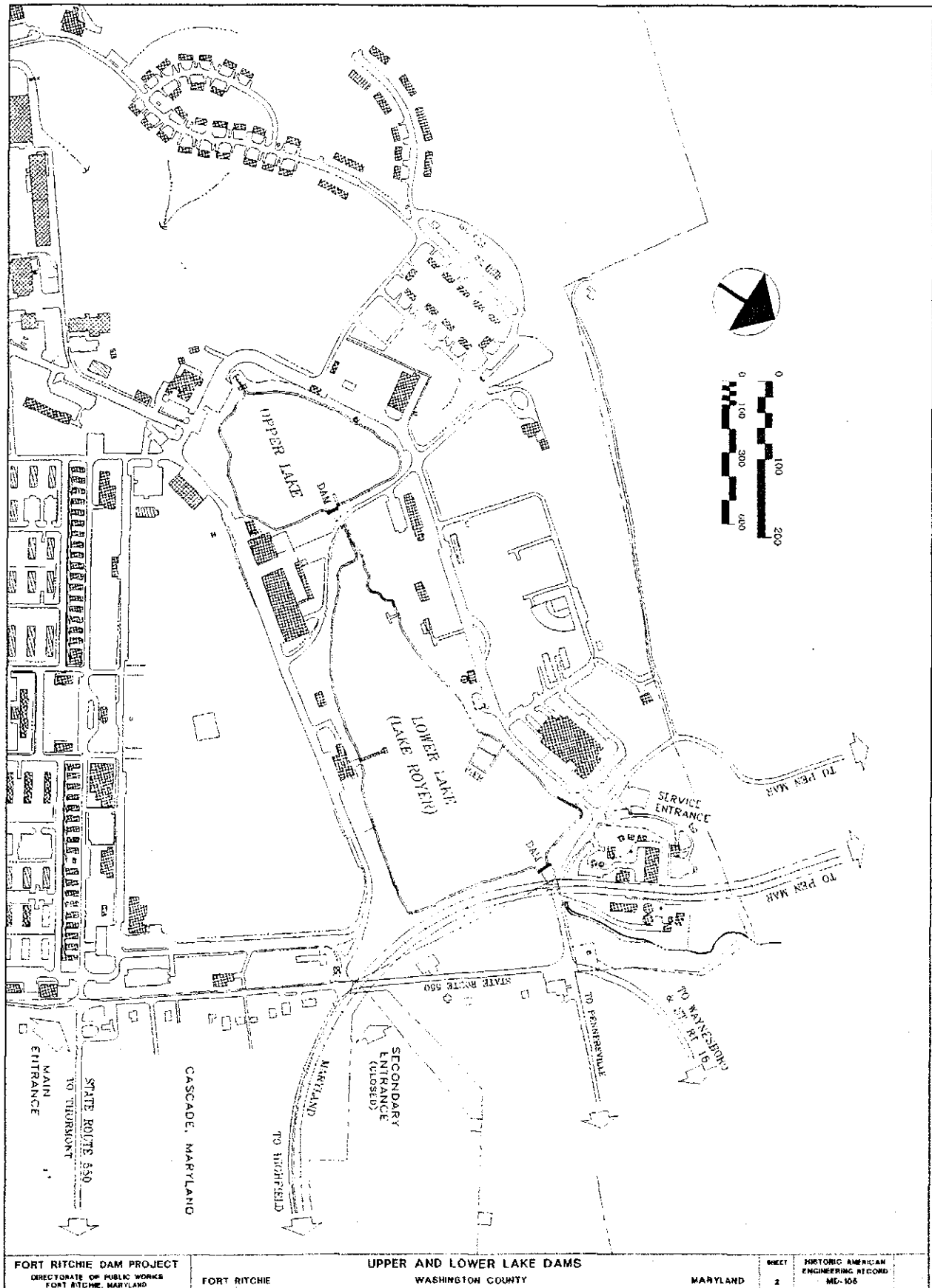
U.S. ARMY GARRISON, FORT RITCHIE,
LOWER LAKE DAM
HAER No. MD-105 (Page 9)

Waynesboro Record Herald

1976 Untitled Article Concerning the History of the Dam at Fort Ritchie, 23 October
1976. Waynesboro, Pennsylvania.



U.S. ARMY GARRISON, FORT RITCHIE,
LOWER LAKE DAM
HAER No. MD-105 (Page 11)



U.S. ARMY GARRISON, FORT RITCHIE,
 LOWER LAKE DAM
 HAER No. MD-105 (Page 12)

